DNx access solution

Direction neutral 3-way outdoor splitter zero loss 1.8 GHz

- **Booster amplifier combined with 3-way outdoor splitter**
- **Patented Direction Neutral Amplifier (DNA) technology**
- **Flat unity gain in upstream as well as downstream**
- **Frequency range: upstream 12-684 MHz; downstream 54-1800 MHz**
- **Designed for extreme outdoor environmental conditions**
- **Can be used to replace 2 and 3-way splitters as well as directional couplers, removing any loss from the equation**

Direction Neutral

Overview

Distributed Gain Architecture (DGA) is designed to help operators achieve high quality DOCSIS 4.0 connections, without adding more diplex filters to the network. We do this by utilizing Technetix' unique technology of diplexer-free amplifiers called the DNA. These small amplifiers can boost the signal to reach the next large amplifier in location where the cable lengths or splitters add too much loss at 1.8 GHz. This splitter is used to solve the issue of additional loss at high frequencies inside splitters and at the same time enable DGA in more locations in the network.

In network architectures utilizing splitters, the loss of this splitter is flat, therefore the replacement of this component to enable this architecture should also exhibit a flat response. Therefore, we have developed a no-loss splitter with flat unity gain response across the DOCSIS 4.0 bands. This 3-way splitter can easily be turned into a zero loss 2-way splitter by terminating the third output port with a 75 Ohm 5/8M terminator.

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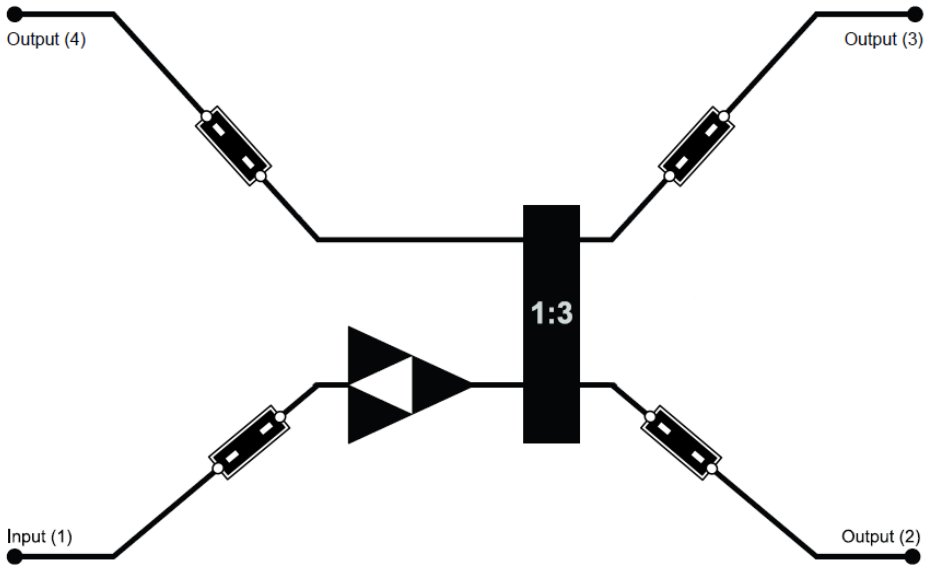
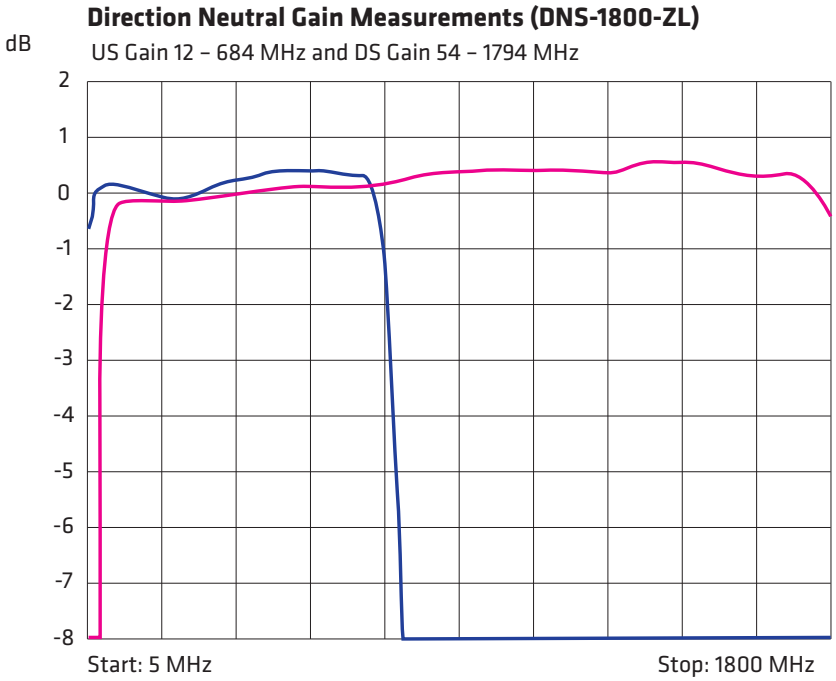
Block diagram





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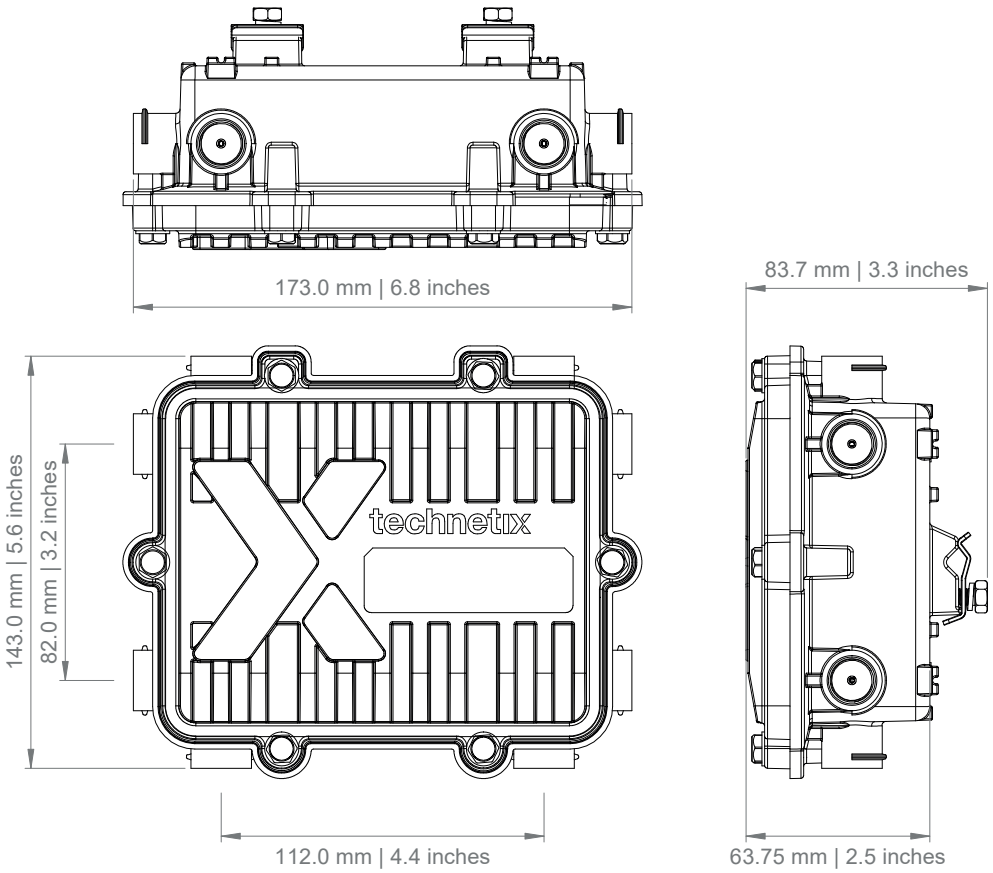
Mechanical drawing



DNS-1800-ZL Splitter device and performance specifications

Parameter		MHz	DNS-1800-ZL			Units	Details	Notes
			Min.	Typ.	Max.			
Impedance				75		Ω		
Frequency	Upstream		12		684	MHz		
	Downstream		54		1800	MHz		
Gain	Downstream input to outputs	54	-1.0	0.0	1.0	dB		
		1218	-1.0	0.0	1.0	dB		
		1400	-1.0	0.5	2.0	dB		
		1800	-1.0	0.0	2.0	dB		
	Upstream outputs to input	12-684	-1.0	0.0	1.0	dB		
Return loss	All ports	12-1800	16.0			dB		
Isolation	Output to output	12	25.0			dB		
		1800	20.0			dB		

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DNS-1800-ZL Splitter device and performance specifications

Parameter		MHz	DNS-1800-ZL			Units	Details	Notes
			Min.	Typ.	Max.			
Noise figure	Downstream	54			18.0	dB		
		1800			20.0	dB		
	Upstream	12			24.0	dB		
		684			24.0	dB		
Power consumption					7.5	W		
Power supply	Line powered		30		90	VAC	Square wave	
HUM modulation	Measured at 15 A	12-50	55			dB	ANSI-SCTE-16	
		50-1218	60			dB	ANSI-SCTE-16	
		1218-1800	55			dB	ANSI-SCTE-16	
Shielding effectiveness		12-1218	110			dB	SCTE IPS-TP403	
		1218-1800	100			dB	SCTE IPS-TP403	
Power passing					15	A		
Input level range	Downstream (full channel load TCP MER >42 dB)		28		45	dBmV	Optimal value is 36 dBmV	
	Upstream (full channel load TCP MER >42 dB)		32		53	dBmV	Optimal value is 43 dBmV	
Surge					6	kV		1
Temperature range	Operating		-40°C to +60°C (-40°F to +140°F)			°C/°F		
	Storage		-40°C to +70°C (-40°F to +158°F)			°C/°F		
IP rating	BS EN 60529						IP68, 1 meter immersion for 1 week	
Connectors	5/8" – 24 female						ANSI/SCTE91	
Housing material	Diecast aluminum						Tri-valent chromate base layer, paint top layer	

Notes

Limit lines are point-to-point unless otherwise specified.

1 | IEEE-C62.14, Combination wave, category B3 (rise time 1.2 µS/fall time 50 µS). 10 surges +/- all ports. No degradation allowed.

Order information

Item code	Model code	Description
19014299	DNS-1800-ZL	DIRECTION NEUTRAL SPLITTER 3-WAY 1800 MHz ZERO LOSS

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